

REMARKS

Claims 1-5 are pending in the present application, and are rejected. The Examiner has withdrawn the rejections over Matsuba et al. However, the Examiner maintains rejections over Tuzuki et al. and GB 1378434.

Applicants note that Tuzuki et al. and GB 1378434 are family members of each other, and therefore, any discussion of one of them is inherently a discussion of either of them. Therefore, Applicants have limited the discussion to that of Tuzuki et al., but note that such discussion applies equally to GB 1378434.

Claim Rejections - 35 U.S.C. §102/103

Claims 1-4 are anticipated under 35 U.S.C. §102(b), or in the alternative, 35 U.S.C. §103(a) over Tuzuki et al. (US 4,179,481) or GB 1378434.

Applicants submit that the rejection for anticipation is improper, and that the rejection for obviousness is overcome by criticality of the claimed ranges.

Applicants submit that there is no anticipation of the claims. If the Board of Appeals in the prior appeal could have affirmed with respect to the §102 rejection, they would have easily disposed of Applicants' arguments and dismissed Applicants' evidence of unexpectedly superior results as unnecessary in light of the anticipation rejection. Instead, the Board emphasized the need for objective evidence of non-obviousness to be commensurate in scope with the claims that the evidence is offered to support. Thus, even the Board of Appeals did not find anticipation of the claims.

Applicants note that the Board of Appeals' prior affirmation of the Examiner's rejection under §103 was based on their finding that Applicants failed to positively prove criticality of the entire claimed ranges of the invention.

Applicants subsequently amended the claim to recite that the compound having a specific viscosity η_{sp} of 0.6-1.6 was obtained by polymerizing in the presence of a latex of a (co)polymer having specific viscosity of at least η_{sp} 0.7. Such reduction of the claimed second stage viscosity rendered the previously submitted evidence of unexpected results as commensurate with the claimed range, since the claimed range was reduced to recite only the range supported by the experimental data.

The Examiner indicates in the present Office Action that the criticality of the ranges has been established, and such criticality overcame the rejections based on Matsuba et al.

Applicants submit that such criticality should overcome the rejection over Tuzuki et al.

The Examiner concludes that although Tuzuki et al. do not expressly teach the specific viscosity of the seed or first stage latex (co)polymers, it is "reasonable" that the viscosity of the seed of the first stage latexes of the prior art would possess the presently claimed specific viscosities given that the composition of the polymers are "essentially the same" as in the claimed composition.

Applicants disagree with this rejection, and submit that Applicants have previously asserted and demonstrated that the viscosity of the seed of the first stage latexes of the prior art do not possess the presently claimed specific viscosities, which exhibit a narrower range than that of the cited prior art.

Applicants had noted in previous responses that in Example 1 (sample number (1)) of Tuzuki et al., a reactor was charged with 0.1 part of ammonium persulfate as a polymerization initiator and 80 parts of methyl methacrylate was added over 4 hours continuously, completing the first stage polymerization, and then the reaction mixture was added a monomer mixture of 13 parts of ethyl acrylate and 7 parts of methyl methacrylate over 1 hour continuously. The resulting final stage polymer has a specific viscosity of 1.60 in benzene, which corresponds to 0.36 in chloroform.

Applicants submit that the specific viscosity depends most strongly upon an amount of a polymerization initiator, and in a case where 0.1 wt part of ammonium persulfate is used as a polymerization initiator, product having the specific viscosity as claimed cannot be obtained.

As further described in lines 3 to 4, column 10 of Tuzuki et al., polymers in Example 3 (sample polymers (5) to (12)) are prepared according to the same process in Example 1. Also, as described in lines 24 to 25, col. 11, polymers in Example 4 (sample polymers (13) to (19)) are prepared according to the same process in Example 1.

Further, in Example 6 of Tuzuki et al., the resulting final polymer has a specific viscosity of 1.65 in benzene, which corresponds to 0.37 in chloroform. The sample polymers disclosed in Table 7 and 8 are prepared according to the same process in Example 6.

Therefore, Applicants concluded that the two-stage polymers disclosed in Tuzuki et al. have specific viscosities lower still than that of the polymers disclosed in Matsuba et al., which were previously shown to be lower than the claimed viscosities.

Applicants submitted that although specific viscosities of the first stage polymers of the two-stage polymers disclosed in Tuzuki et al. were not specifically described, it was reasonable that they were lower than that of the polymers in Matsuba et al., and therefore lower than 0.7, which is outside the scope of the present application.

The Examiner emphasized that Applicants' notation of the lower-than-claimed viscosity of Example 1 of Tuzuki et al. was not persuasive because "the prior art teaching is not limited to any particular example".

Applicants note that Applicants' reference to the Examples of Tuzuki et al. was not to extrapolate from a single example. Rather, it was to show that none of the examples taught the claimed pair of first and second stage viscosities.

As noted previously, MPEP §2131.03 indicates that when the prior art discloses a range that overlaps the claimed range, but no specific examples falling within the claimed range are disclosed, a case-by-case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute anticipation under the statute." The MPEP then indicates that if the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute anticipation of the claims.

Applicants' reference to the examples was to show that there are no examples in the claimed range, so as to satisfy the requirements of MPEP §2131.03. Therefore, Applicants

would be able to count on their evidence of unexpected results to rebut the rejection for obviousness.

Applicants additionally note the following with respect to the particle size limitations.

The particle size of 1500 to 3000 Å in the present claims does not overlap with the particle size 1000 Å in the cited reference (column 17 lines 26 to 33). Applicants note that the particle size in claim 1 is a particle size of the first stage particles.

Fine particles having such a very small particle size do not exist generally as the first stage particles in a normal atmosphere, and thus it can be assumed that the particle size in the cited reference (column 18 lines 10 to 14) relate to a particle size in powdery state that is produced by agglomeration of the first stage particles.

The reason why the particle size of the first stage particles are intended to increase up to 1500 to 3000 Å, although the particle size of the first stage particles are disclosed as 1000 Å in the cited reference lies in that in a case where latex having such particle size of the first stage particles as above is formulated into powder, agglomeration force is lowered to reduce a particle size of the powder because a contact area among the latex particles becomes lower as compared with the powder obtained by using the latex having the particle size of the first stage particles disclosed in the cited reference. Small particle size of the powder can give molded articles having excellent qualities, and thus, it is necessary and required to set forth the particle size of the first stage particle as 1500 to 3000 Å as in the claim 1 of the present application.


In conclusion, the Examiner's assertion that a particle size is adjusted by a specific viscosity and constituents in a composition is not correct, but a particle size can be adjusted and controlled independently mainly by the amount of emulsifier and separately from a specific viscosity and constituents in a composition. The Examiner's assertion that a particle size is dependent upon a polymerization degree of a polyvinyl chloride resin is also not correct. Applicants surmise that that the Examiner may have misunderstood the above from Applicants' phrase, "the particle size of the above powder is coincided to a particle size distribution of a polyvinyl chloride resin" as used in the previous response.

In view of the aforementioned remarks, Applicants submit that that the claims are in condition for allowance. Applicants request such action at an early date.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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